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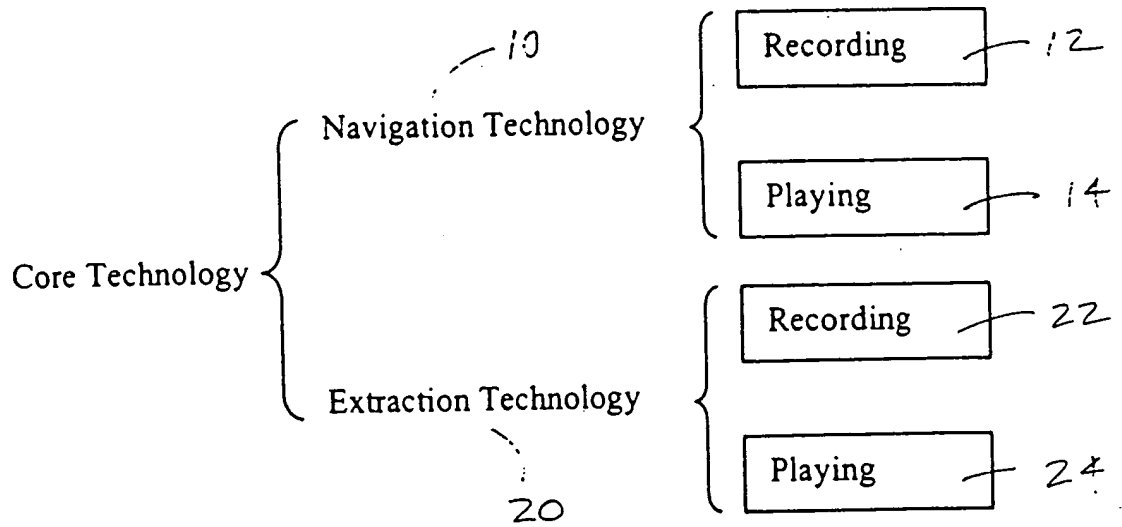


FIGURE 1

Recording Navigation Script - Getting to a Page

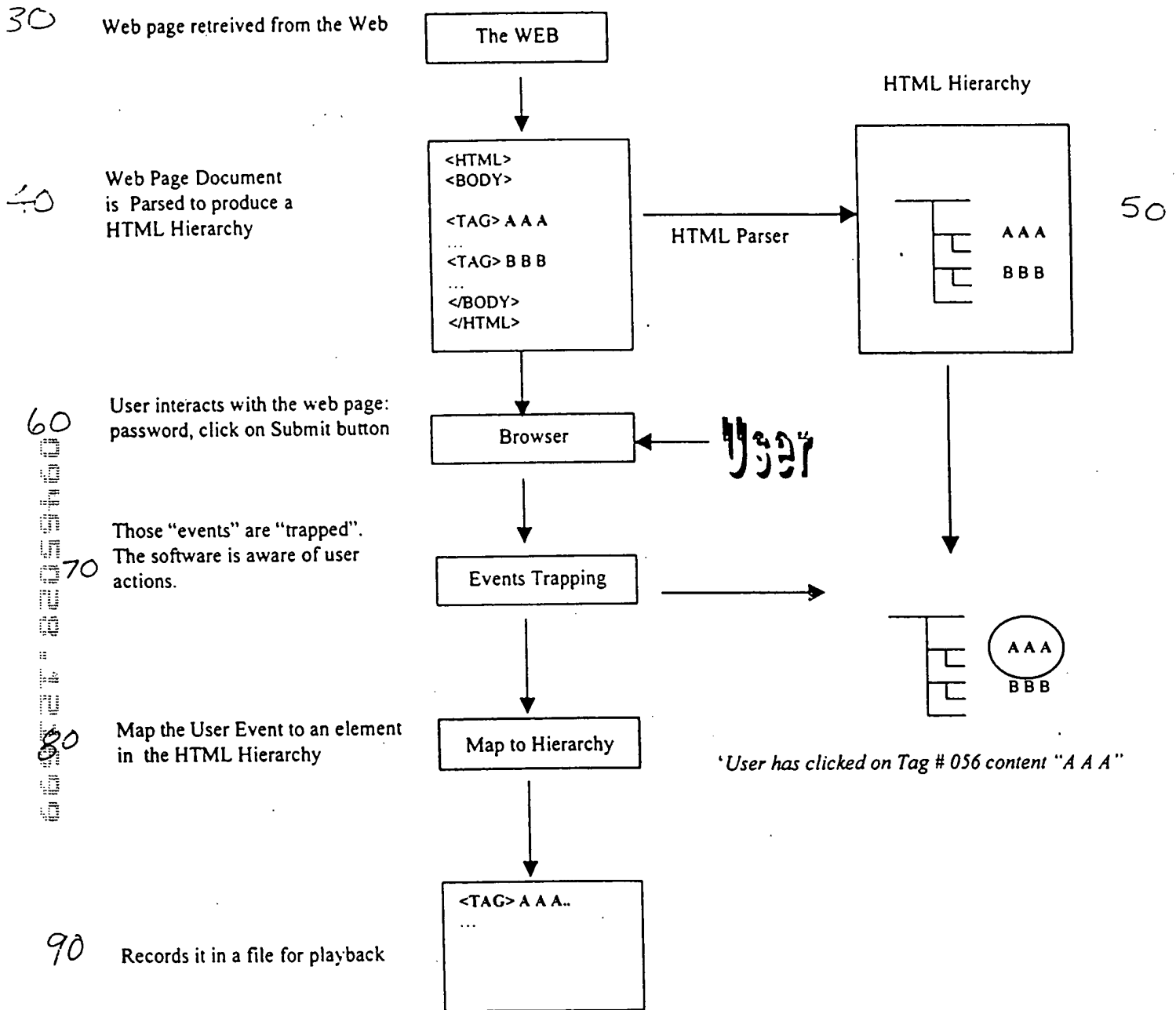


FIGURE 2

The diagram shows an 'XML Navigation file' (represented by a stack of documents) containing XML tags (<XML>,, </XML>). Arrows point from this file to 'Form' and 'URL'. From 'URL', three arrows point to 'Hard-coded', 'Structure-based', and 'Text-based'.

FIGURE 3

Recording Extraction Script - What to t from the page

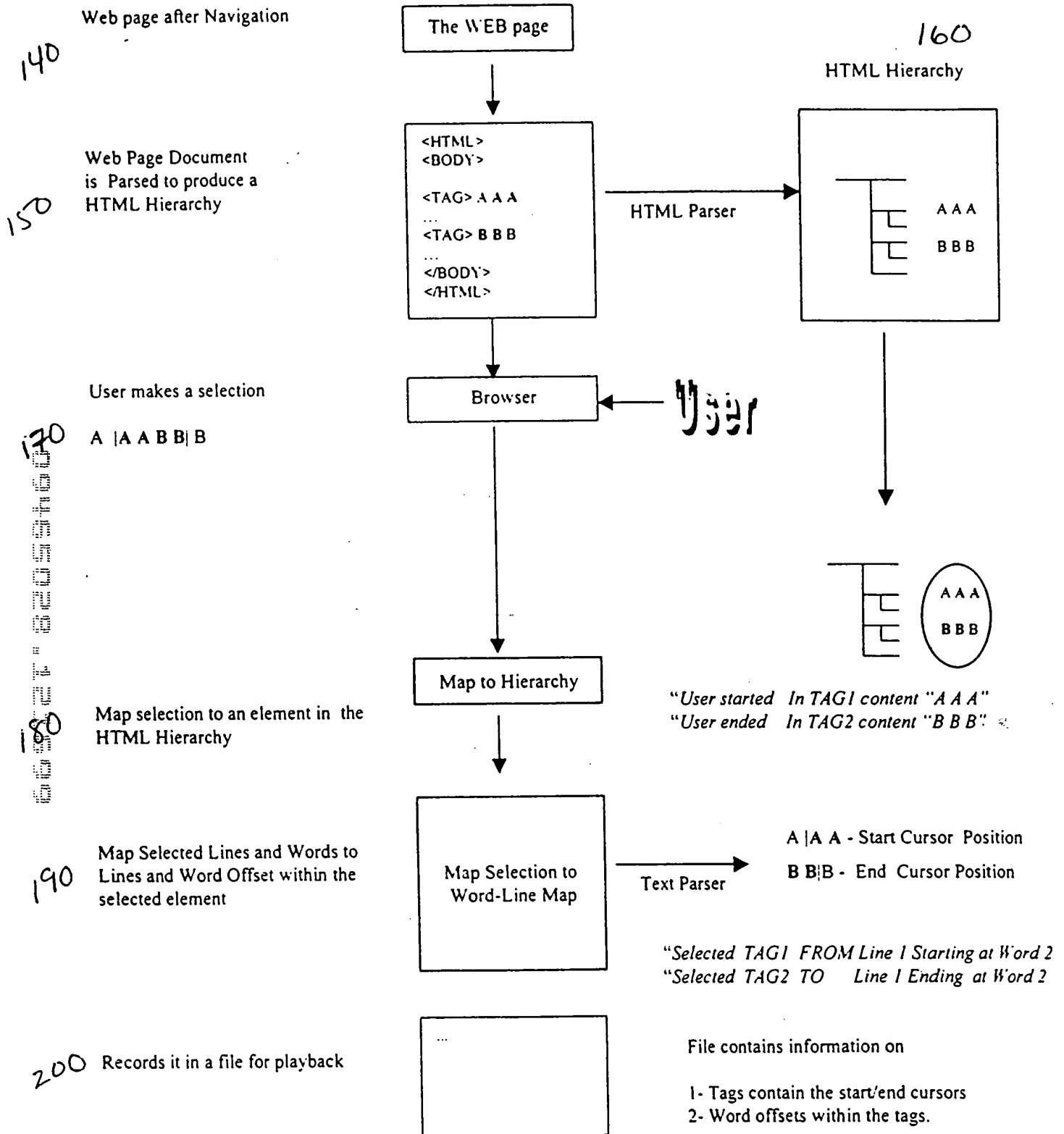


FIGURE 4

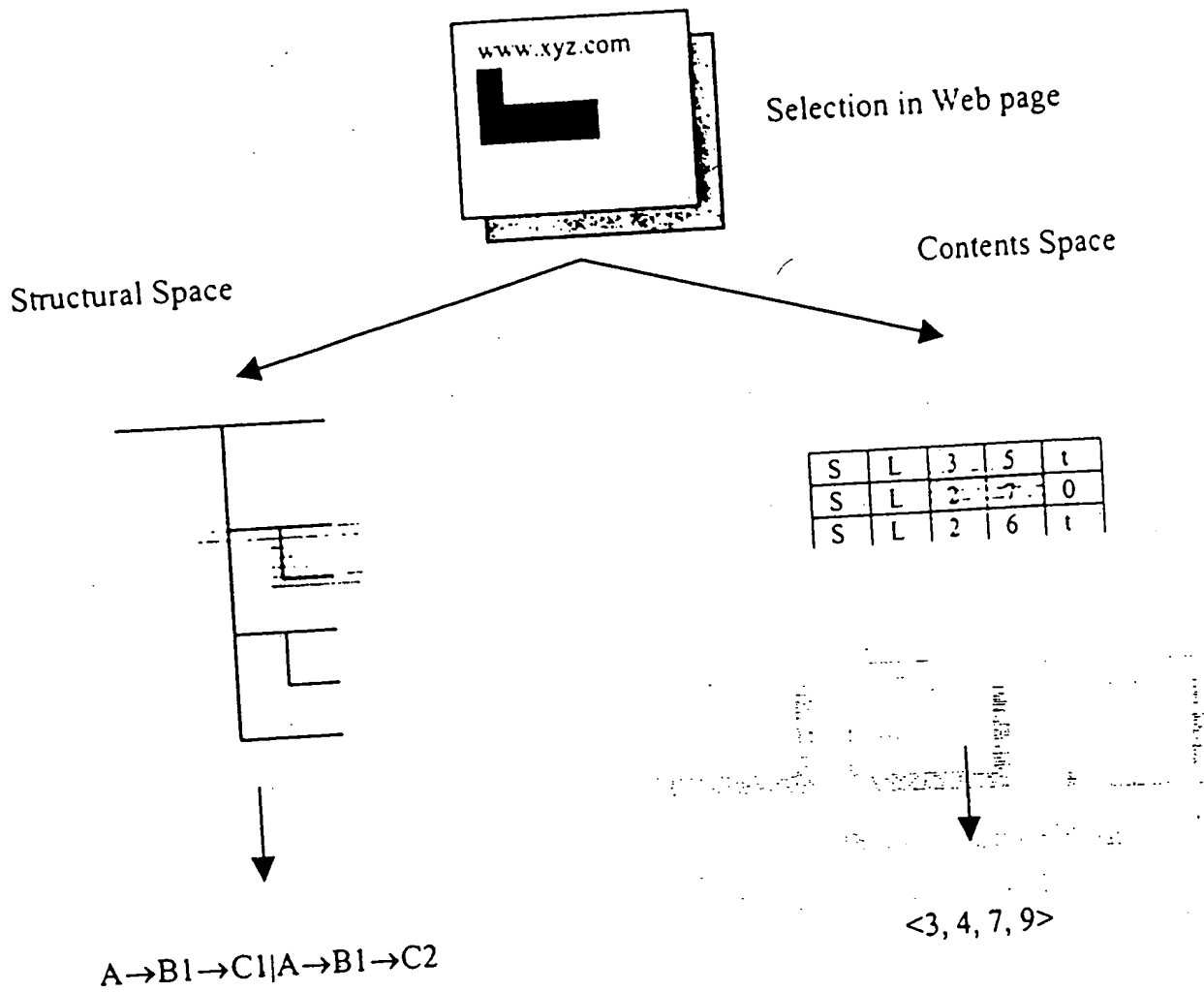


FIGURE 5

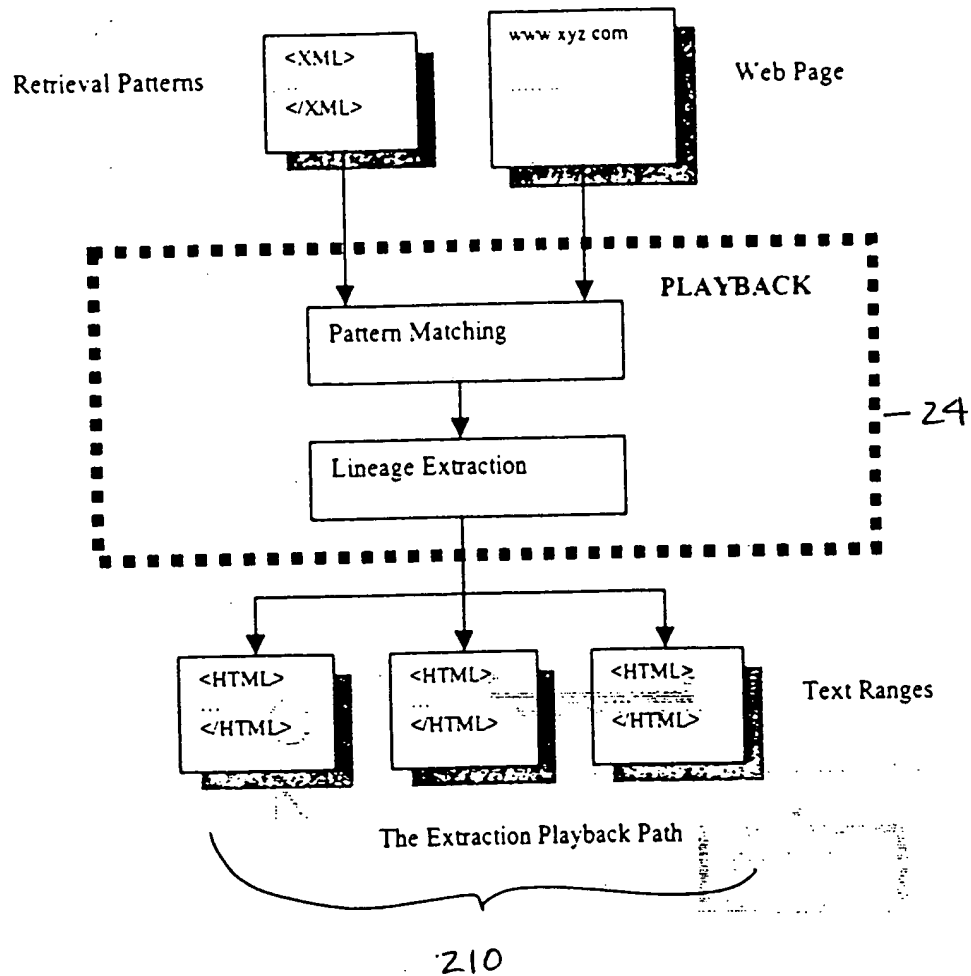


FIGURE 6

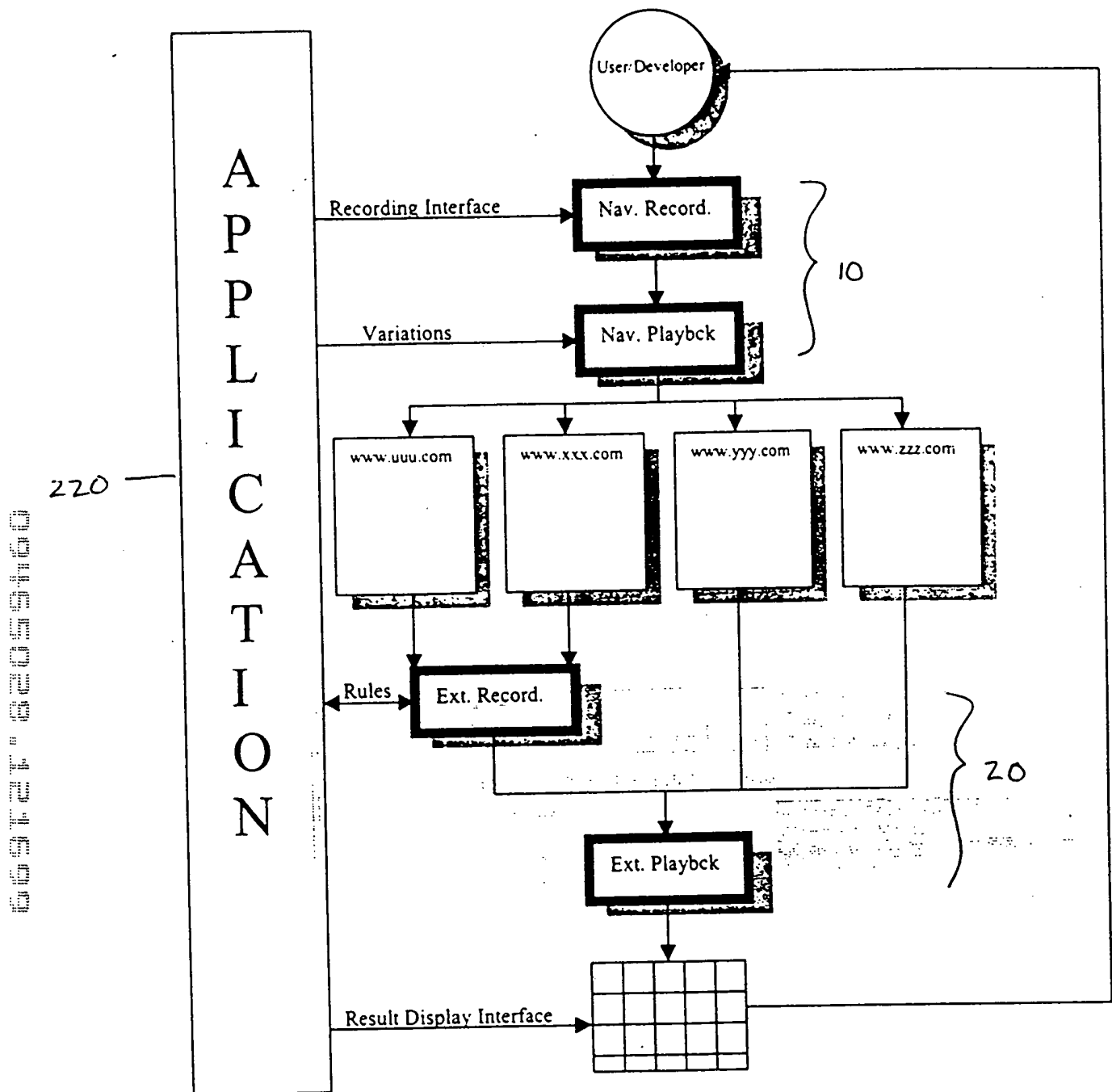


FIGURE 7

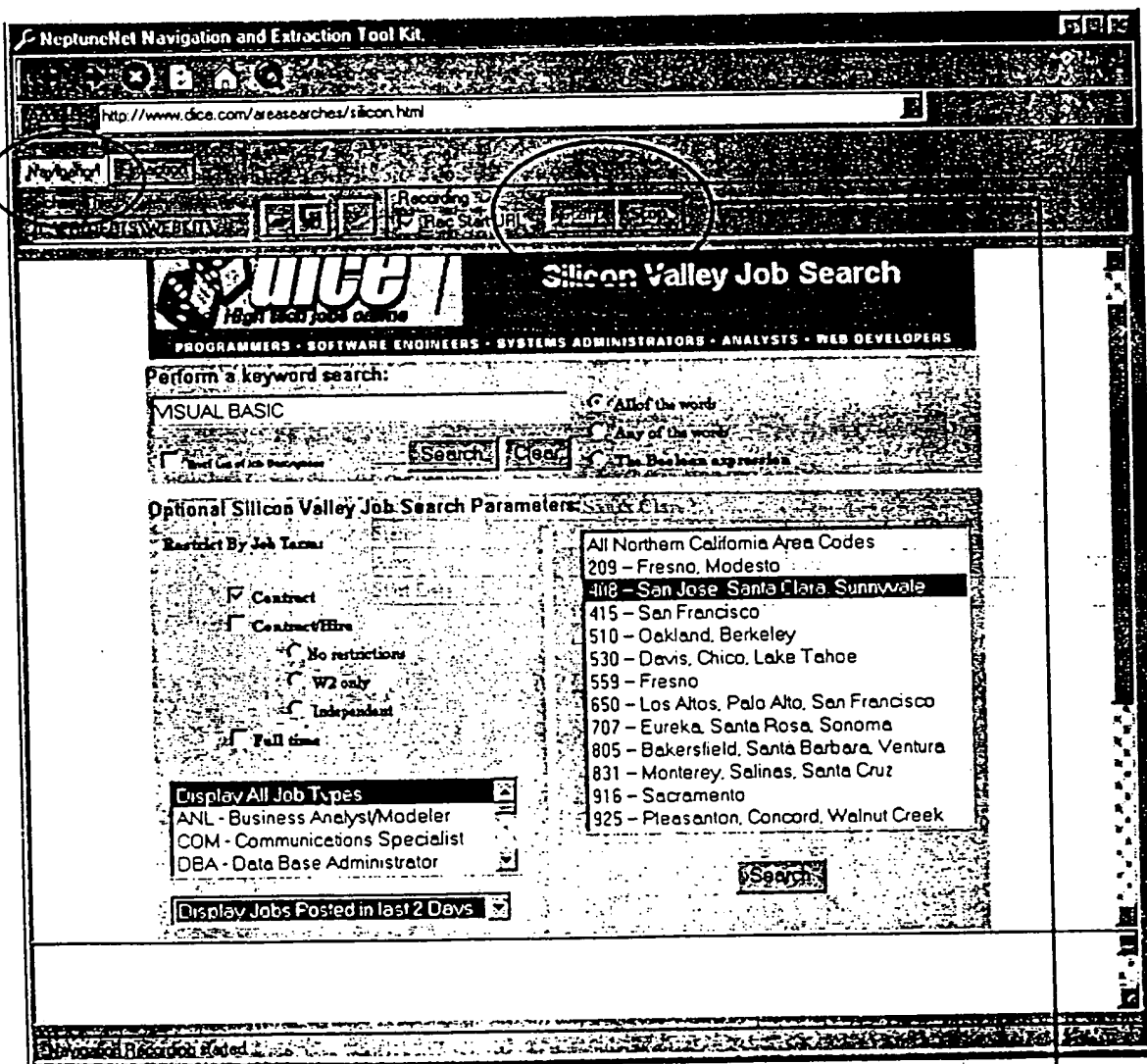
Ease Of Use: Build Your Own "JobFinder"

It takes just a few steps to build any Application.

For Example: Looking For a Job? Make your own JOB FINDER!

Step 1: Navigation

- Navigation: Navigate to the URL, Record & Playback the Sequence
- Extraction: How to extract specific information
- Find Text: Use Find Text to find "interesting" information



- Just press 'Start' button and Surf as usual.
- Your actions are recorded.
- When you are done, press 'Stop' button.

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FIGURE 8

JobFinder : Extraction

Step 2: Extraction

- Navigation: Navigate to the URL, Record and Playback the Sequence
- Extraction: How to extract specific information
- Find Text: Use Find Text to find "interesting" information

NeptuneNet Navigation and Extraction Tool Kit.

http://jobsearch.dice.com/jobsearch/jobresults.cgi?sr=1&hp=50&cf=1d651dca00&briel=0&banner=1

Extraction

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Position Title: SOA Contractor

Skills required:	SQA, Tester, Visual Basic, QA Partner		
Location:	San Jose		
State:	CA	Pay Rate:	40/hr
Area:	408	Term:	CON W2ONLY
Start Date:	ASAP	Length:	0 months

Position Title: Windows Programmer

Skills required:	Visual C++, VB, MFC, active x		
Location:	Santa Clara		
State:	CA	Pay Rate:	Open
Area:	408	Term:	CON W2ONLY
Start Date:	ASAP	Length:	less than 6 months

Position Title: Scripting Engineer

Skills required:	UNIX, TCL/Scripting, Visual Basic Scripting		
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SOA Contractor SQA, Tester, Visual Basic, QA Partner |

User identified data to be retrieved automatically. Recorded in lower Window.

- Just highlight the information you want to retrieve from the web page
- Click on the toolbar buttons to fine tune and record your action(s).

FIGURE 9

Your JobFinder Output

**Save your "script" and run it on demand. View output on your Browser.
Save it in Excel, Access or Word. Do it Every Hour - automatically.**

C:\projects\WebInfo\testFile.htm - Microsoft Internet Explorer		
C:\projects\WebInfo\testFile.htm		
<u>SQA Contractor</u>	SQA, Tester, Visual Basic, QA Partner	San Jose 40/hr 3 months
<u>Windows Programmer</u>	Visual C++, VB, MFC, active x	Santa Clara Open less than 6 months
<u>Scripting Engineer</u>	UNIX, TCL/Scripting, Visual Basic Scripting	San Jose Top Rate, DOE Contract
<u>Visual Basic programmer</u>	Visual Basic 5.0/7.0, SQL Server 6.5, MS Access	San Jose DOE 6 months+
<u>Visual Basic Developer</u>	VB Programmer	Mountain View DOE Indefinite
<u>Sr. NT Systems Administrator</u>	NT, Internet, IIS, Visual Basic, VB Script, Firewall	Silicon Valley Market Rate 6 months
<u>Visual Basic Programmer/Analyst</u>	VB 4.0 or higher, Oracle, various database experience	Santa Clara DOE 6-9 months
<u>Web Developer</u>	E-commerce, SQL server, Active X and Visual Basic	San Jose \$43 - \$47 per hour 3-4 Months/Indefinite
<u>programmer</u>	VAX/VMS, alpha, COBOL	Santa Clara \$58.00 3 months
<u>Visual Basic Programmer/Windows 95/98 Order Mgmt/mkt</u>	Shipped Product to Market/Accounting Exp. a PLUS	San Jose DOE 1 month +
<u>IT Engineer</u>	Oracle RDBMS, PL/SQL, SQL, C/C++, CGI, HTML, Visual Basic	San Jose Top Rate, DOE Contract
<u>Senior NT Systems Administrator</u>	Windows NT, Internet Information Server, Back Office	San Jose DOE TBD
<u>Software Developer/C, PL/SQL, PERL</u>	C, PL/SQL, PERL, VB, Oracle forms, MS Access	Santa Clara OPEN 3 mos+
<u>Immediate Openings 11/16-11/20 1998</u>	SQA, Visual Basic, Filemaker, Help Desk, trainer	Bay Area DOE 6 month contract +
<u>Manufacturing Technician</u>	CTM Test Manufacturing	Santa Clara open 6-12 months
<u>Senior NT Systems Administrator</u>	Windows NT (4+ yrs), IIS, Unix, Visual Basic, e-commerce	Santa Clara market 6+ months
<u>IT Engineer</u>	Oracle RDBMS, PL/SQL, SQL Loader, C, C++, CGI, HTML	San Jose DOE 3+ months
<u>SAS Programmer</u>	SAS programmer for QA Dept	Milpitas \$58-78/hr 2-5 months
<u>IT SOLUTION SPECIALIST</u>	V.B., C++, NT AND/OR WINDOWS, COBOL, HP3000, FTP	SUNNYVALE \$55-\$60/HR 3MONTHS
<u>Lotus Notes Developer</u>	Domino Web Client, Lotus Script, HTML	Santa Clara Open Contract
<u>Sr. NT System Administrator</u>	NT, IIS, Back Office, scripting	Santa Clara excellent 12 months

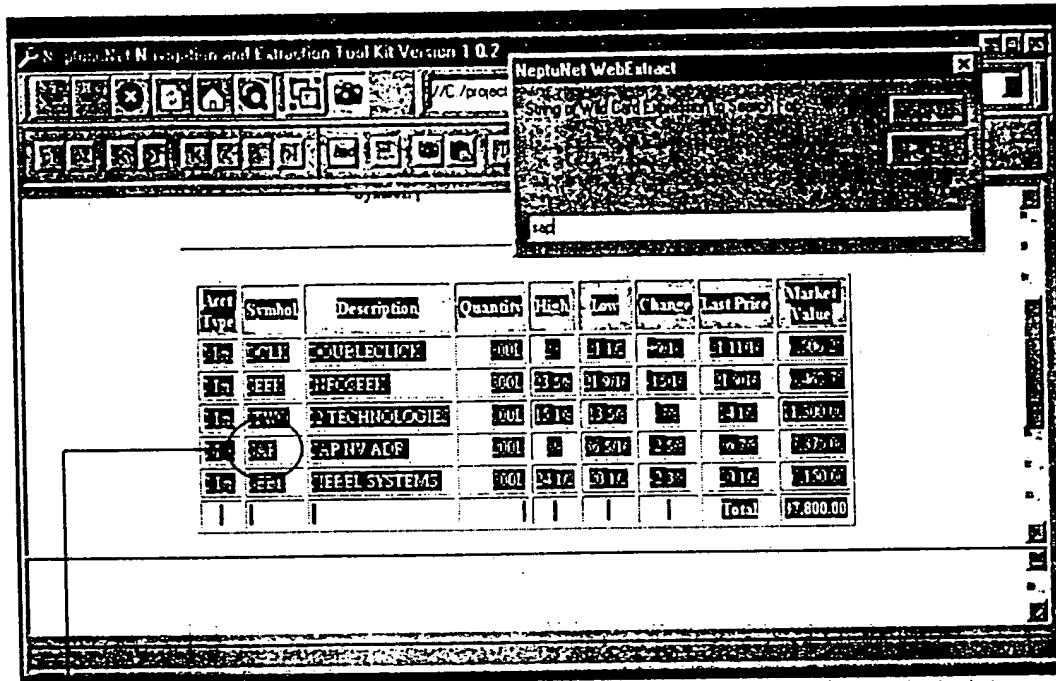
Automatic extraction of jobs data. Data may also be transferred to a data base for SQL processing

FIGURE 10

Additional Search Tools: Find Text

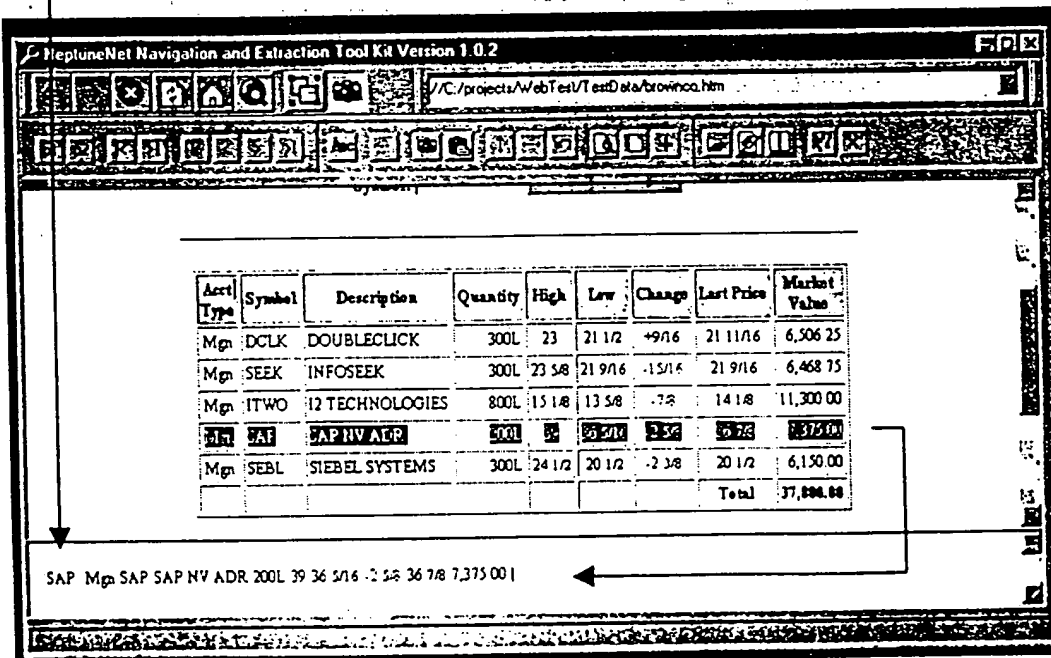
• Step 3: Find Text

- Navigation: Navigate to the URL, Record and Playback the Sequence
- Extraction: How to extract specific information
- Find Text: Use Find Text to find "interesting" information



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1



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1 Type in the string to search for, e.g.

"SAP"

2 Selection of relevant data based on Found Text :

The Row

FIGURE 11

FIGURE 12

CaptiNet uses the Web Page Hierarchy to locate elements in that Web Page.

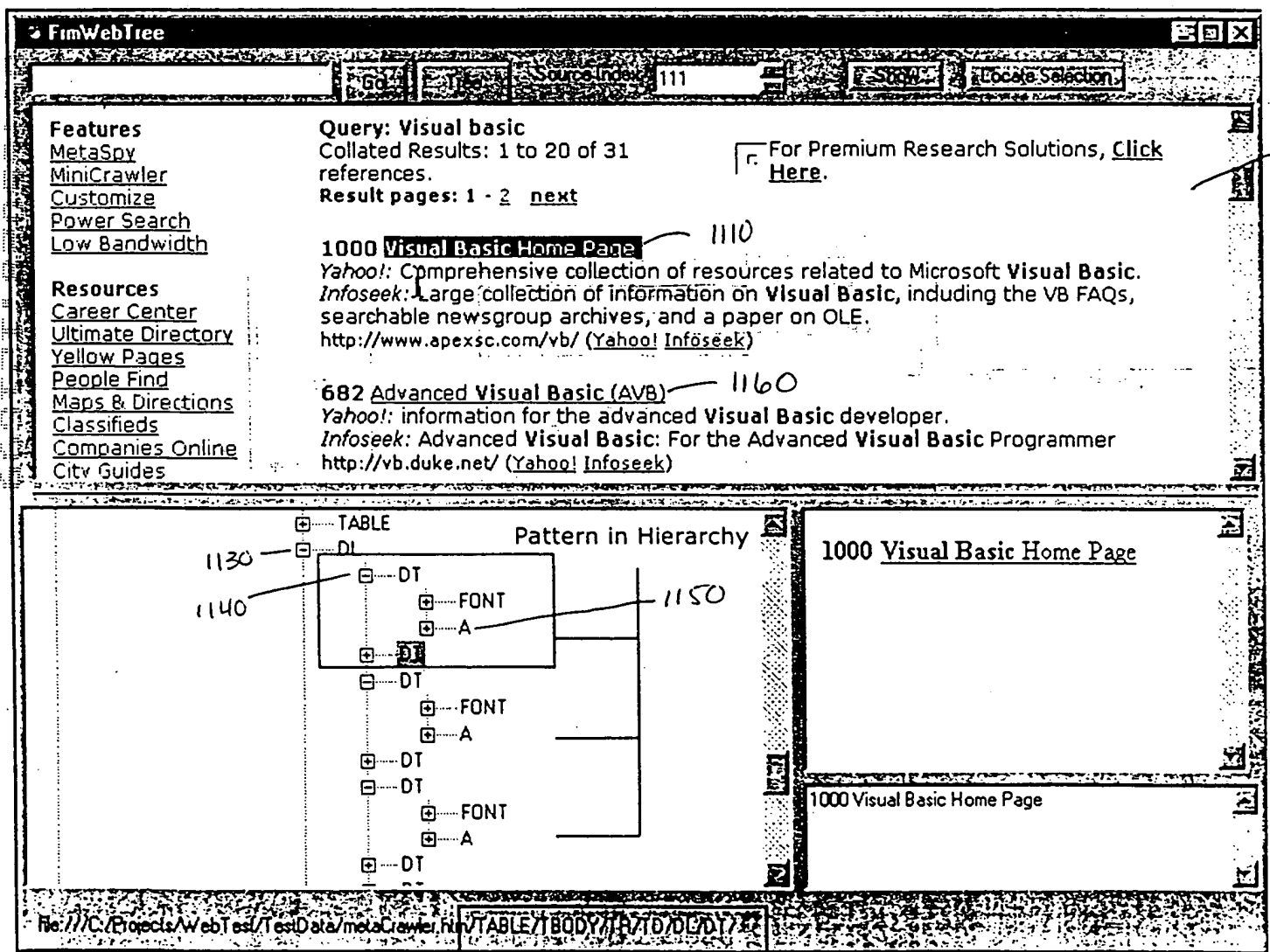
Example:

"Visual Basic Home Page" is a selection in the Web page. We wish to reselect it in a new web page that shares the same Page characteristics.

By locating its parent elements, A Ancestry Tree for the page is built. This Tree is the HTML Hierarchy - an Org Chart for the page.

Using the Org Chart, one can locate the same element in another Web page that shares the same hierarchy.

Later we will exploit the fact that a sequence or "pattern" exists in the Ancestry Tree..



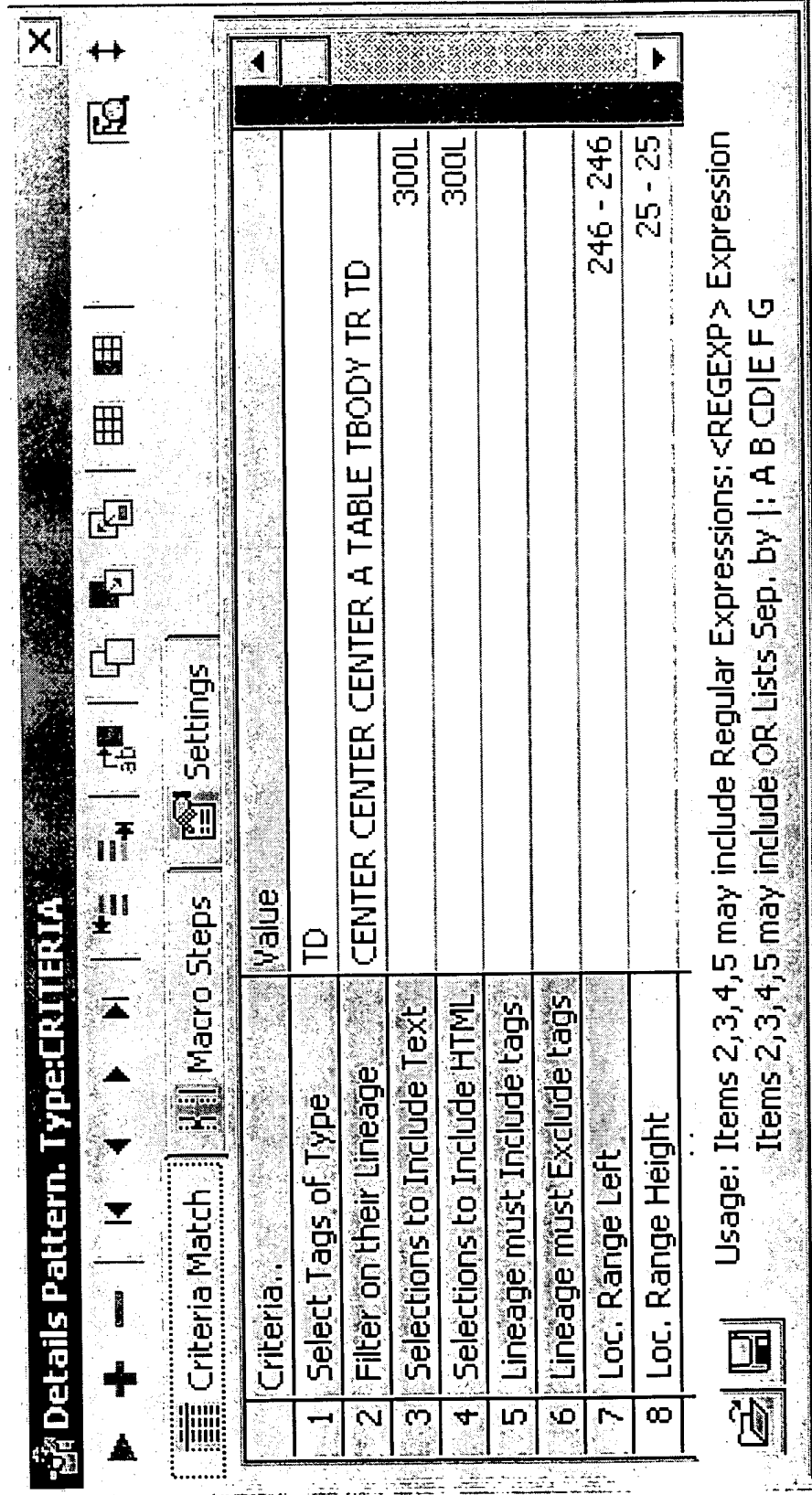


Figure 14

Flow in Extraction for Different Pattern Types

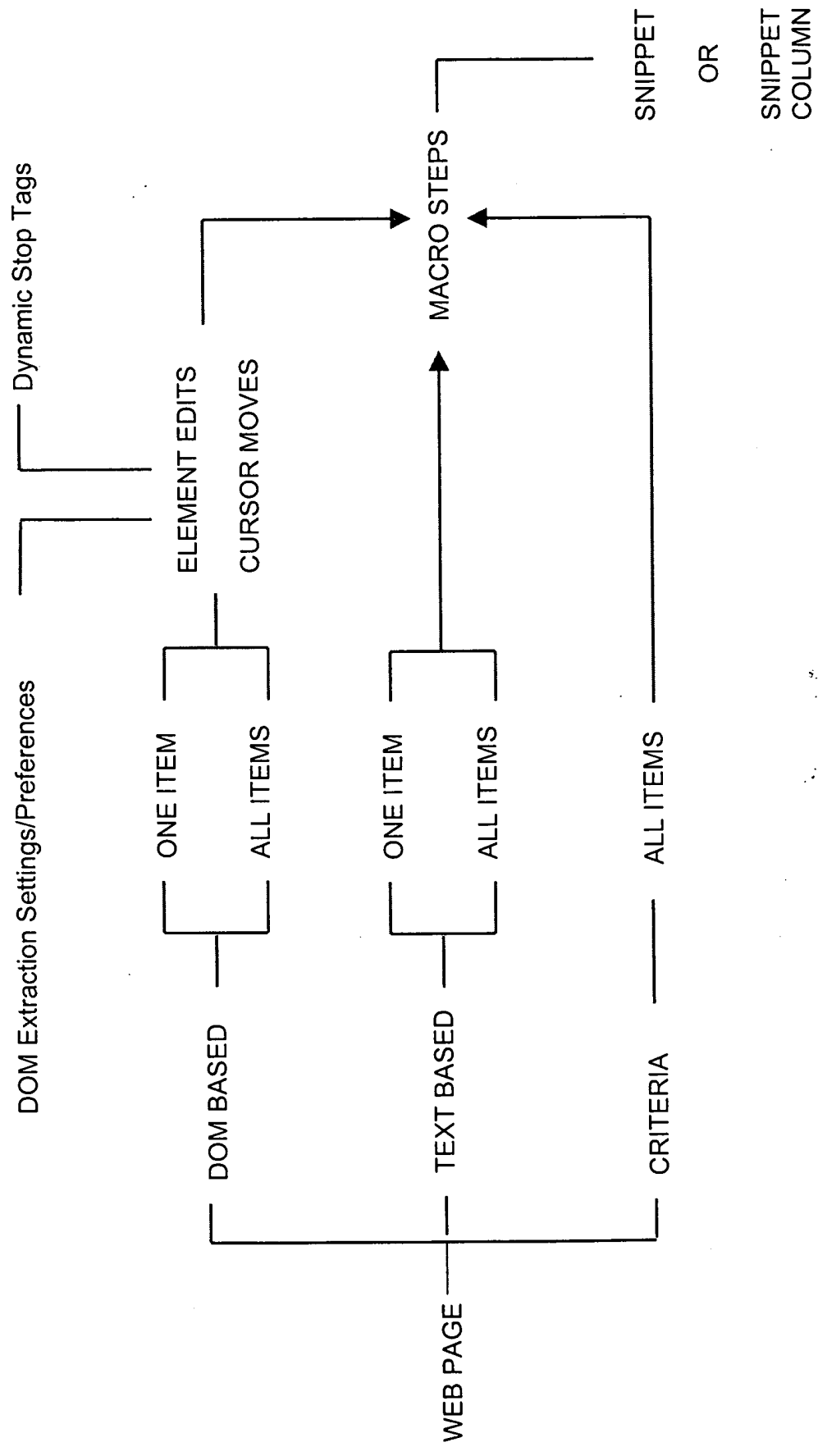


Figure 15

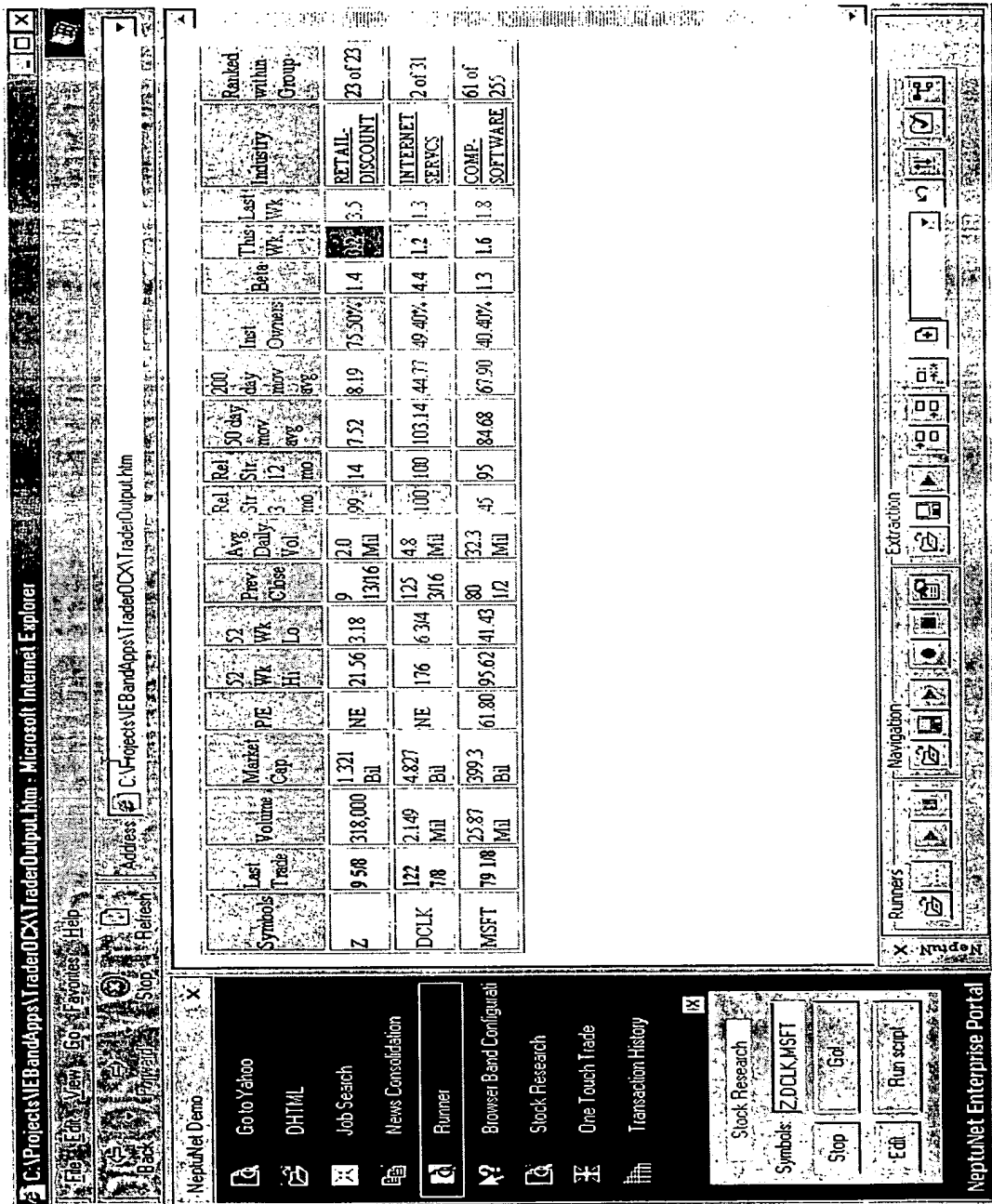


Figure 16